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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,936	01/25/2002	James J. Croft III	T9574.NP	2517

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EXAMINER	
DABNEY, PHYLESHA LARVINIA	
ART UNIT	**PAPER NUMBER**
2643	

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/075,936	CROFT ET AL.	
	Examiner	Art Unit	
	Phylesha L Dabney	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) *11-15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 11/3/03 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5-6,9-10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to the application filed on 25 January 2002 in which claims 1-27 are pending.

Information Disclosure Statement

1. The information disclosure statement filed 17 May 2002 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. The following reference was missing: European Patent WO/ 01/08449 dated 2/1/01.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the *spaced apart relationship of the diaphragm with respect to the primary magnet being greater at specific location(s)* of claims 19 and 25 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 11-15 are missing. Claims 16-27 should be renumbers to claims 11-22 and will be treated as such in the office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With respect to claims 5 and 24, it is not clearly understood which element is related to the secondary magnetic structure such that the secondary magnetic structure performs a side-to-side relationship.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 26-27 (original numbering; however, on subsequent actions these claims will be treated as 21-22) are rejected under 35 U.S.C. 102(b) as being anticipated by Kopinga (U.S. Patent No. 4,527,017).

Kopinga et al teach a planer magnetic transducer including: a vibratable diaphragm (5), an arrangement of a primary magnetic structure (figs. 1-4, upper magnetic structure), and at least one secondary magnet (figs. 1-4, lower magnetic structure) having fewer magnets positioned on the opposite side of the diaphragm.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-10 and 16-25 (original numbering; however, on subsequent actions these claims will be treated as 11-20) are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopinga (U.S. Patent No. 4,527,017), and further in view of Torgeson (U.S. Patent No. 4,468,530).

Regarding claim 1, 6, 9-10, 16-18, and 20, Kopinga et al teach a planer magnetic transducer including: a vibratable diaphragm (5) including conductive paths (6, 6', 6"), a primary magnetic structure (figs. 1-4, upper magnetic structure) including at least three elongated magnets, and at least one secondary magnet (figs. 1-4, lower magnetic structure) having fewer magnets positioned on the opposite side of the diaphragm, wherein the magnetic structures and

diaphragm are arranged in a predetermined spaced apart relationship. Kopinga et al does not teach a mounting support structure. Torgeson teaches a mounting supporting structure (figs. 1-8, 16, 17, 22, 24-25, 37, 39, spacer), for aligning and securing the primary and secondary magnetic structures to the diaphragm beneficially providing air gap spacing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the mounting support structure to the invention of Kopinga as taught by Torgeson for supporting spaced apart transducer parts. Furthermore, the combination of Kopinga and Torgeson does not teach the energy product (BHmax) of the magnets used in the structure. The energy product of a magnet is determined by the type of magnetic material used in its composition. It is known that if rare earth metals, such as samarium or neodymium, is combined with other metal alloys, such as cobalt or iron, then a magnetic composition having an energy products above 25 mega Gauss Oersteds is obtainable and the magnetic composition will be lighter in weight and highly coercive. The examiner takes official notice that it is known in the art to use these metal compositions in planar magnetic transducers to reduce the weight of the structure and improve the coercive force in planar transducer necessary for the production of high, mid, and low frequency sound. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the magnetic structure of Kopinga and Torgeson using a samarium or neodymium magnetic composition to reduce the weight of the structure and improve sound production.

Regarding claims 2 and 21, the combination of Kopinga and Torgeson teaches the secondary magnetic structure is less than 60% of the magnets of the primary magnetic structure (fig. 4; col. 4 lines 18-20).

Regarding claims 3 and 22, the combination of Kopinga and Torgeson teaches the secondary magnetic structure is less than 40% of the magnets of the primary magnetic structure (fig. 4; col. 4 lines 18-20).

Regarding claims 4 and 23, the combination of Kopinga and Torgeson teaches the secondary magnetic structure is no more than 20% of the magnets of the primary magnetic structure (fig. 4; col. 4 lines 18-20).

Regarding claims 5 and 24, as best understood, the combination of Kopinga and Torgeson teaches the secondary magnetic structure has one row of magnets centered in a side-to-side relationship on the planar-magnetic transducers (fig. 4; col. 4 lines 1-20).

Regarding claim 7, the combination of Kopinga and Torgeson teaches the primary magnet structure has at least four as shown in figures 1-7 (Kopinga) which includes the teaching of the primary magnetic structure having five adjacent rows of magnets. In addition, the combination of Kopinga and Torgeson teaches the secondary magnetic structure has at least four as shown in figures 1-7 (Kopinga) which includes the teaching of the secondary magnetic structure having three adjacent rows of magnets.

Regarding claim 8, the combination of Kopinga and Torgeson teaches the primary magnet structure has at least four as shown in figures 1-7 (Kopinga) which includes the teaching of the primary magnetic structure having five adjacent rows of magnets. In addition, the combination of Kopinga and Torgeson teaches the secondary magnetic structure has one central row of magnets (fig. 4; col. 4 lines 1-20, slab).

Regarding claims 19 and 25, the combination of Kopinga and Torgeson teaches all of the limitations except having the predetermined spaced apart relationship of the diaphragm from the

magnets of the primary magnetic structure being greater at a central region of the diaphragm over at least one central magnet than at the remote regions over at least one remote magnet. With respect to this spacing, the examiner takes official notice that it is known to vary the spaced relationship of the diaphragm from the magnetic structure at select locations to prevent distortion from the diaphragm inadvertently contacting the magnets of the magnetic structure, thus improving the sound quality. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to space the diaphragm from the magnetic structure at a greater distance at the central region of the diaphragm relative to remote region of the diaphragm to prevent distortion of the diaphragm at it central less restrictive region relative the remote restrained (by the mounting support) region of the diaphragm for sound improvement.

Remarks

7. With respect to the applicant's comments in PCT/US023/02557, which are also relevant in this application, the examiner has included the arguments as follows: Kopinga in combination with Torgeson does not restrict the type of magnetic material used to construct the magnets used. However, it is known to use rare earth metals, such as samarium or neodymium, combined with other metal alloys, such as cobalt or iron, to make a magnetic composition having an energy product above 25 mega Gauss Oersteds (for further discussion see MMPA standard specifications for permanent magnet materials). In addition, the applicant's claims state that the transducer of Kopinga in view of Torgeson does not have a second magnetic structure having fewer magnets than the primary magnetic structure. The examiner would like to point out that since the applicant's claims do not included or exclude any particular magnet, such as primary or

auxiliary, from calculating whether the second magnetic structure has less magnets than the first magnetic structure, then the Kopinga in view of Torgeson combination applies.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phylesha L Dabney whose telephone number is 703-306-5415. The examiner can normally be reached on Mondays, Tuesdays, Wednesdays, Fridays 8:30-5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on 703-305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 872-9314, for formal communications intended for entry and for informal or draft communications, please label "Proposed" or "Draft" when submitting an informal amendment.

(703) 306-0377, for customer service questions.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

PLD

March 6, 2004

CURTIS KUNTZ
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